





Transferred on permanent loan

MMVII

KING'S *College* LONDON

FCC2 RA450.6.G53 MED

Library

Medical and Chirurgical Society
of London.

Account of an epidemic fever, which
occurred at Gibraltar

1814

201173946 X



KINGS COLLEGE LONDON

208-0 8W



ACCOUNT
OF AN
EPIDEMIC FEVER,

WHICH OCCURRED AT

GIBRALTAR,

IN THE YEARS 1804, 1810, AND 1813;

TAKEN FROM OFFICIAL DOCUMENTS, MILITARY AND
MEDICAL, AND FROM THE COMMUNICATIONS OF
JOSEPH D. A. GILPIN, M.D. DEPUTY INSPECTOR OF
HOSPITALS.

FROM THE FIFTH VOLUME OF THE MEDICO-CHIRURGICAL
TRANSACTIONS, PUBLISHED BY THE MEDICAL AND
CHIRURGICAL SOCIETY OF LONDON.

London :

PRINTED BY G. WOODFALY, ANGEL-COURT, SKINNER-STREET.

1814.



1167428

ACCOUNT
OF AN
EPIDEMIC FEVER,
WHICH OCCURRED AT
GIBRALTAR,

IN THE YEARS 1804, 1810, AND 1813, TAKEN FROM
OFFICIAL DOCUMENTS, MILITARY AND MEDICAL,
AND FROM THE COMMUNICATIONS OF JOSEPH D. A.
GILPIN, M.D. DEPUTY INSPECTOR OF HOSPITALS.

THE Society is indebted to the War Office, to the Medical Board of the Army, and to Dr. Gilpin, the principal medical officer at Gibraltar, during the last epidemic, for the most important materials in this article, to which they deem themselves bound to give early publicity, as it involves a question of high importance to the Army, and to the State. It is to be regretted, that there is no detailed medical history of the fever of 1804. All that is known of it, besides what is exhibited in the annexed tables, is, that it agreed in its principal character with the yellow fever incident at all times to the inhabitants of the West Indies, and occasionally in the summer and autumn to those of North America, and the South of Europe; and that few precautions were used

to oppose its introduction, or to prevent its spreading, as it was not apprehended to be infectious.

Besides the official military returns of the three sickly years, the Society has been favoured with the returns of three other years of ordinary health, preceding or intermediate to those in which the fever occurred. These were procured with a view to compare the healthy years, with those that were sickly; and also to ascertain whether, in ordinary years, there was much difference in point of mortality at different seasons.

The Society has also been favoured with an account of the weather during the last sickly season, and of the same season in the two preceding years, by Mr. Fraser, Surgeon-major to the garrison. The same gentleman has favoured us with a statement of the sickness and mortality of the town, as well as the garrison during these months. Both these are annexed to this article.

QUERIES

BY THE

MEDICAL BOARD OF THE ARMY,

With the Answers of Dr. Gilpin, to whom they were addressed.

I. Were the people who were first attacked with the disease, inhabitants of Gibraltar, or

strangers; and if inhabitants, had they recently returned from any place infected with the like epidemic, or been residing for however short a time in a place exposed to marsh *effluvia*?

Answer—They were strangers, who had come from Cadiz; where at that period, the epidemic in question prevailed. It cannot be ascertained, whether they had, or had not previously resided in any place exposed to marsh *effluvia*.

II. If it should be supposed that the disease was brought to Gibraltar by any individuals, and these persons ascertained;—did they come ill to the garrison, or had they been affected with the fever at any other town where the disease prevailed, or had they only been living in the house with the infected, or had they any communication with them by personal contact, or by means of clothes, or otherwise?

Answer—The individuals that were supposed to have brought the disease were ascertained. One of them was ill when he arrived in the garrison. It is only known that they came immediately from Cadiz, where the disease was prevalent.

III. If it has been found that any person had lately returned from an infected place, under any of the circumstances above-mentioned; did the disease first afterwards appear among the people residing in the same house with him, or with whom

he had any immediate communication otherwise, and thence spread; and did the spreading take place in any regular progressive manner from that source?

Answer—The disease did appear among the people residing in the same house, and speedily also on both sides of the street in which the house was situated.

IV. Although part of the town of Gibraltar, and several of the barracks are situated upon a declivity, where water cannot stagnate if left to find its level, it has been alleged that in the lower part of the town, the descent towards the sea may be so small as to prevent its passing with sufficient rapidity; and that in the higher parts of the declivity, it being obstructed in its passage down, by artificial means formed for retaining the water, to fill the tanks or cisterns with, it may in both cases have become stagnant, and in the town especially be so near, if not upon, the surface, as to exhale through it, and mix with the animal and vegetable matter in the streets and alleys, or back grounds, privies, drains, &c. of the different houses, and so create a fruitful source of baneful *miasma*, more or less in a concentrated and active state according to the varying, and relative circumstances of the heat and moisture of the season. These circumstances you will take into consideration, with the utmost care and precision, so as to ascertain their existence, or otherwise. If they exist

wholly, or in part, how far it may appear that the origin of the epidemics of 1804, 1810, and 1813, have been connected with the miasma produced?

Answer—The town of Gibraltar is situated on the declivity of the mountain, commencing from about two hundred feet above the level of the sea, to the line wall. The declivity is very rapid, and there is no impediment either natural or artificial to prevent the escape of the water. There are no public tanks or cisterns in the town; those in private houses, are filled from the roofs only. The heats are so excessive during the summer months, as to leave no sort of moisture on the surface of the ground, even for a few hours; and the garden grounds become so hard, as to admit the insertion of a hoe with difficulty. I am decidedly of opinion, that the existence of the disease cannot have had its origin in any of the causes detailed in query, No. IV.

V. Did the disease first appear in the parts most exposed to the *effluvia*, if such may have arisen?

Answer—The disease first appeared in a part of the town, by no means particularly exposed to noxious *effluvia*.

VI. How are the barracks situated in relation to these causes respectively? If, where the water

has been intercepted in its natural course downwards, it should be found to be any where in a stagnant decomposing state, either by itself, or mixed with animal or vegetable matters; are the houses or barracks in the upper parts of the rock, where the disease prevailed in any great degree, (as has been reported by Mr. Fraser, it did last season in the artillery barracks, situated eight hundred feet above the level of the sea,) exposed to the near influence of the vapours emitted from such places?

Answer—The causes here spoken of, do not exist. The declivity of the hill is so very abrupt, that water cannot possibly remain stagnant in its passage to the sea. On a reference to Mr. Fraser, he told me, that if, in his report, he said “barracks,” it must have been through mistake; for the body of artillery alluded to were *encamped* on the height he speaks of.

VII. How is the dock-yard and navy garden situated relatively to the swamp in the neutral ground, and the ditches of the works facing it?

Answer—The dock-yard is situated about two miles from the neutral ground, which is a quicksand about a mile in length, and half a mile in breadth at the narrowest part; there is no swamp on the neutral ground, nor any moisture near its surface. Previous to the siege, the greater part of

this space was laid out in gardens, and although constantly irrigated by means of *norias**, was ever reckoned the most healthy spot about the garrison, and used as a summer retreat by the inhabitants. These facts I, have from the best informed, and oldest residents. The ditches in front of the neutral ground are dry.

VIII. You say in your report, that a number of persons entirely escaped the disease, though strictly confined to the only situation where you conceive marsh *effluvia* may be supposed to exist, viz. the dock-yard and navy garden. From this it is inferred, that some persons in these places were attacked with the disease; in this case, what proportion were they to those who escaped? Could the disease in them be traced to contagion?

Answer—The dock-yard is situated under the line wall; and a drain very offensive to the smell passed through it, and has been covered over since the existence of the disease. Besides this drain, there is a stagnant piece of water, called the *Lamber*, in which boats are hauled up to repair; this, it is said, has three or four feet of mud in it, and receives great part of the filth of the shores at the south, and emits a very offensive *effluvium*. Of five hundred persons who were confined there during the whole sickness, there was not an instance of a person's being attacked. It should be ob-

Draw-wells

* Wells.

served, that these persons held their communication with the garrison through the medium of health-guards from the Pratique-office; and the same precautions were used as are pursued in cases of plague. These facts have been ascertained by the Pratique Master himself, a man of talents and great observation; and militate strongly against the idea that the disease *originated* in noxious *effluvia*.

IX. It has been alleged also, that the cattle for the use of the garrison of Gibraltar, are usually landed on a moist piece of ground, situated between the wall and the water, towards the neutral ground, where the whole are left standing a whole day, depositing their dung in considerable quantity, laying the foundation of such a miasma as may be supposed to produce disease. Is this the fact, as thus stated? and if so, how far does it appear likely, either by itself, or in conjunction with other causes, producing hurtful *effluvia*, to have contributed to the epidemics in question? Is the practice alluded to constant? or is there reason to believe that it prevailed in a more extraordinary degree previous to the last and preceding epidemics, so as to have tended to their production? Did the disease prevail more in the neighbourhood of that place, or where the vapours from it may have been conveyed by the wind, than in others exposed to no such causes?

Answer—Since the Peace with Spain, cattle

have always been landed on the Spanish beach, at least a mile and a half from the town, and driven to the Spanish farms in the neighbourhood, from whence they are brought in every day, but never more than one day's consumption at a time, and are all slaughtered early in the morning. It formerly was the case, that the cattle were landed on a sandy beach between the line wall and the water, but that beach was by no means wet; however, such has not been the case during the last six years, and consequently the disease cannot be traced to this source.

X. Is the state of the swamp in the neutral ground ever varied by circumstances in such a manner as to be more or less productive of miasma? What is alluded to by this question is the probable case of its being half dried up in some seasons when the heat has been greater, and the rain less than usual. How are the town and barracks, in part, or in whole, relatively situated in regard to the swampy ground in question, so as to be exposed to its vapours? Are any vapours offensive to the smell presumed to come from the swamp or ditches of the works, or the burial-ground of Gibraltar? It has been alleged that from the burial-ground issues such a smell, and was perceived particularly about the end of last June, and has been suggested as one of the sources of the epidemic. How far is this the fact as to the smell, and how far might it be supposed that

something arising in the burial-ground, whether perceived by the senses or not, had any share in producing disease as far as it might be conjectured, from this prevailing especially in its neighbourhood, or in places exposed to its influence?

Answer—There is no swamp on the neutral ground. The rains during the winter season naturally lodge on the less elevated parts of it, but the water is evaporated early in the spring, and not the least moisture remains on the surface of the sand as before stated. I never was sensible of any smell from the burial-ground; nor have I ever heard any one complain of it; and I see no reason why the burial-ground should contribute now, more than it formerly did, to the creation of disease; it is a pure dry sand; it was established during the epidemic in 1804, and is at least half a mile from the town*. The ditch towards the neutral ground is a dry one, and perfectly well ventilated, and formed, not by digging, but by the erection of a glacis in front of it; it is full fifty feet wide, and the glacis which forms it, or rather the covert way, is not above fifteen feet above the level of it.

XI. Are the rubbish, filth, &c. daily taken out of the streets of Gibraltar? and in what state are

* The burial-ground, just without the south port, it has been said, has at times emitted a disagreeable odour; but I cannot say that during the numberless times I have passed it, I was ever sensible of it.

the receptacles for these articles ; and how are they situated in respect to where the disease has especially prevailed ? Have the cellars, yards and vaults of the houses of the lower classes inhabiting the narrow lanes and alleys, been examined, particularly in the part of the town where the disease made its appearance in 1804, 1810, and 1813 ?

Answer—The rubbish and filth are removed daily from the town, and deposited on the neutral ground, full half a mile from the works ; and the Spanish gardeners are always in waiting to receive the latter, and it is immediately carried off to their respective gardens. There are no under-ground cellars in Gibraltar ; certainly not half a dozen in all the town, and these in the houses of the most considerable merchants. The lower classes of persons are certainly dirty in their houses, but not to a degree that will warrant a supposition of disease having been occasioned by that means. The population is not so extensive by 2000 persons, as it was in 1811, when the garrison was perfectly healthy.

XII. Was the first appearance in those years (1804, 1810, 1813,) in the same place ?

Answer—The disease in 1804 shewed itself first in an open square. The Spanish Consul's family occupied part of the building ; they remained without communication with the infected families, and

escaped infection. In 1810, it discovered itself to the southward of the town about half a mile; and in 1813, in the centre of the town in a well ventilated street.

XIII. What is the state of the shores and ditches, particularly at that part of the works which are towards the neutral ground?

Answer—There are no sewers near the neutral ground; the ditch (there is but one) is a well cultivated garden.

XIV. Are all rubbish and decayed vegetables, and animal matters, carefully and regularly removed from the market-place, particularly in autumn, and the slaughter-houses kept in good order?

Answer—Vegetables are so excessively dear, that there is scarcely any waste of them. During the summer there are none: for the trifling quantity which can be eaten by the rich, during that season, can hardly be observed in the market; and fruit is also scarce; the markets are cleared, and the refuse carried out every day. There is but one slaughter-house in the garrison, which is under the line wall, built out into the sea, and the floor of it is overflowed every spring tide. But certainly at times a very unpleasant *effluvium* proceeds from it; and it is now in contemplation to remove it.

XV. Although all the circumstances above referred to as probable causes of producing the miasma that is considered the cause of remittent fever, may be found to have existed in a greater or less degree, does it appear that the remittent fever, similar to that endemic in the marshy districts of warm climates, prevails annually at Gibraltar; and do intermittents prevail there? Did any circumstances occur last year, either connected with heat, moisture, or the winds, or with the place itself in respect to cleanliness, or the state of cisterns, water-courses, drains, &c. different from the ordinary state of them in other years, when no such epidemic has appeared?

Answer—Bilious remittent fever, and other autumnal complaints are seen in this garrison every year. In 1812 we had in the hospital, particularly of the foreign corps, and 7th Royal Veterans, some very bad cases of bilious remittent, attended with most of the worst symptoms; but I have no reason to believe that any of the circumstances enumerated in Query XV. were so different from the ordinary state of them in other years, as to create a suspicion that they contributed to the appearance of the epidemic last year. Intermittents do not prevail here; indeed I have not known a case of it occur (excepting that of the Lieutenant-Governor) but in those who had had the disease at Walcheren, or during their residence in some of the marshy districts of the peninsula. And it may be ob-

served, that this affords a very strong proof of the non-existence of marsh *effluvium* in this garrison; or at least that the production of it is too trifling to give rise to formidable disease.

XVI. Did free ventilation influence the propagation of the disease?

Answer—It had a tendency rather to check it.

XVII. When the disease spread in the same neighbourhood, house, or barracks, were the persons so affected exposed equally to the same atmosphere supposed to convey the miasma; or did the disease seem to spread from those affected to the persons situated nearest to them, and so progressively; or did it attack different persons in different places at the same time, but all exposed to the same atmosphere?

Answer—Generally speaking, the persons affected breathed the same atmosphere; but as the disease in numberless cases ran progressively through numerous families; and, as in other instances, where some members of families (whose personal attendance on the sick in their houses was not called for) escaped, though breathing nearly the same atmosphere, it is to be presumed, I think, that the disease in most cases was communicated from one person to another.

XVIII. Were many of the attendants of the sick in private houses and hospitals attacked with the same disease ; and where this did not happen, were there any circumstances evident, that might tend to have rendered such persons unsusceptible of the contagion, such as their age, previously having had a like disorder, particular precautions, &c.?

Answer—In private houses, in most cases, the attendants were attacked. There were undoubtedly many exceptions in the hospitals ; but it was to be accounted for, as, generally speaking, the attendants were persons who had had the disease previously either in the West Indies, or in Spain, or here, in 1804. At the commencement of the disease, last year, it was calculated that there were about 5000 persons within the walls who had previously passed through it ; and after careful inquiry, there does not appear to be one well authenticated case of a person's having received the infection a second time. I heard, indeed, of three or four ; but as the nature of the *previous* fever could not be exactly known, these exceptions have but little weight in so momentous a question. The exemption from a second attack, I am credibly informed, is firmly believed in Spain. At Cadiz, last year, though the fever put on the very worst symptoms, and destroyed the patient frequently in 48 hours, the deaths did not exceed, in a popula-

tion of upwards of 70,000, fifty a day, and these were chiefly strangers. The Spaniards are so fully convinced that they cannot receive the infection a second time, that having passed the disease is matter of great rejoicing among them; and a medical certificate of the fact is a sufficient passport into an infected town, which they enter without the smallest apprehension.

XIX. It appearing that several officers were seized with the epidemic, and a considerable proportion of them died, besides different persons of their families; what occasioned their exposure to the contagion? It would be proper to be particular in this part of the inquiry. During the prevalence of most contagious diseases, such particularly as that of the plague, they do not prevail in any proportion to a degree among the higher classes of people, to what they do among the lower, especially where many of the latter are living in the same house and barracks. Indeed, by the pains that have been bestowed lately at Malta, the plague was kept almost entirely from among the troops, though quartered in the large and populous town of La Valetta. Now this being the case, does it not appear probable that owing to the precautions that intelligent individuals would be induced to make use of, of their own accord, and to those that might be instituted for the safety of the soldiers of the garrison, the disease might have been

prevented from spreading among either, if the disease proceeded from contagion, but if from noxious *effluvia*, such precautions would be of little or no avail, all, or most, being unavoidably exposed to it?

Answer—In answer to this question, it may be observed, that the officers of the garrison were necessarily exposed to infection during their performance of its duties; and therefore could not confine themselves to their houses or barracks. It may also be remarked, that precautions, such as are used during the plague, could hardly be justified, unless the important point of contagion was decided upon at the very commencement of a disease. The plague can hardly be mistaken for any other. We might have been thrown off our guard, had we not seen at an early period after their arrival, two of the sick strangers from Cadiz, for the Spanish Government declared that, after the most serious and fullest investigation, no contagious disease existed in that city. One man from Cadiz died in the Catholic hospital a week or ten days before I was informed by an intelligent medical officer residing in Cadiz, that the disease *did* exist in that city at the time when the declaration above-mentioned was made. It strikes me, that, had the late epidemic originated in noxious *effluvia*, the persons confined to the dock-yard and navy garden would suffer from it in particular, and that it would have exerted some influence amidst the great number of

those who were sent out of the garrison to a situation so near it, that they must frequently have breathed the same atmosphere with those who remained within its walls.

XX. What were the precautions used ?

Answer—As soon as the disease was ascertained, a quarantine was laid on infected houses, till the sick were removed either to the civil or military lazaretto ; and when they filled the wards appointed for them, those who were in large airy houses were confined to them, by guards placed at the doors. The troops were removed and encamped at Europa, and without the works towards the neutral ground, with the exception of the artillery, who were encamped on the situation alluded to by Surgeon-Major Fraser. Infected bedding, &c. was burned. Barriers were placed across several streets to render the separation of the troops from the inhabitants as complete as the duties of the garrison could admit of. Respectable merchants came forward and were appointed inspectors of the districts into which the town was divided ; and instant information was given by them when any one was taken ill ; and town serjeants were appointed, who immediately carried their orders into effect, by calling upon some medical person to visit the sick, and by removing them as before stated. I think I may venture to say, that every precaution was used by the Board of Health that could be devised, and

that they were promptly carried into execution by order of the Lieutenant-Governor.

XXI. Was the disease of a remitting or continued type? and if the former, did it ever pass into the intermittent, and *vice versa*?

Answer—Excepting the insidious cessation of symptoms in some cases, mentioned in the statement I sent to the Board, the type of the fever was that of continued; I never saw or heard of an instance of its having passed into an intermittent, or *vice versa*.

* REPORT MADE TO THE LIEUTENANT-GOVERNOR, BY DR. GILPIN

Gibraltar, 10th December, 1813.

During the months of August and September last, I saw some cases of fever, which appeared to me to be the usual autumnal bilious remittent; but on visiting two men in City Mill Lane, I found them labouring under a fever, apparently of a still

* After this document had been consigned to the press, it appeared in a respectable periodical work. Though it is a rule of the Society to admit only original articles; yet as it was the author's wish, that it should first appear in this work, and as it is necessary from its connection with the other matter composing this article, to the due elucidation of the whole, it was deemed advisable not to countermand the printing of it.

more serious type; but as I saw them only a few hours previous to their death, I had not sufficient grounds, on which I could found a decided opinion as to the nature of the disease.

I was soon after called by the late Mr. Pigoli, to see some of his patients, and in their cases I recognised the symptoms and appearances of a fever which has been denominated *Typhus Icterodes*, and of which I had seen numberless cases in the Islands of Grenada, Martinique and Guadaloupe, when Physician to the Forces under the late Lord Grey.

In the month of October I attended different families, the numerous members of which were attacked in succession with a fever of the same type; many of the symptoms were similar to those which accompany bilious remittents—such as anxiety, listlessness, alternate chilly and hot fits, white tongue, yellow skin, nausea, vomiting, &c. but those symptoms and appearances, which I considered as characteristic of the disease above-named, were the protruded red eye, and exquisite pain at the bottom of the orbit, and of the forehead, back and limbs; and as the disease advanced, the dilated pupil, excessive irritability of stomach, hæmorrhage from the mouth and nostrils, dark vomiting, skin of a dingy yellow hue, unlike the *bright* yellow suffusions of the bilious remittent; and in

many cases an entire* and fatal suppression of urine. —To this catalogue I may add, that insidious cessation of symptoms, which frequently occurs about sixty hours from the first attack, raising hopes in the patient and attendants, that are speedily quelled by an aggravated recurrence of every fatal symptom. This deceitful calm I have often witnessed in the General Hospital at St. Pierre, in Martinique.

In the general mode of treatment, the medical officers of the garrison are I believe agreed. Calomel given at first in rather a full dose, and afterwards in smaller ones at the distance of three or four hours, seems to be the means pursued; and it has been observed, that if the bowels be thoroughly opened, before the third or fourth day, the disease frequently proceeds with few untoward symptoms, and generally does so if the remedy affects the mouth. In the West Indies we hailed that effect as a very favourable one. In many cases, however, whatever might have been the previous treatment, a succession of alarming symptoms occur, and few more so, than the extreme irritability of the stomach. Various remedies have been recommended with a view to calm its violent action; the application of a blister, a table-spoonful

* The author mentions in a letter to the President of the Society, that this symptom appeared to arise from a want of secretion, as the bladder, on the introduction of a catheter, was generally found to be empty.

given at short intervals, of a mixture of equal parts of lime-water and milk, solid opium in doses of half a grain or more, every two or three hours, pills made of Cayenne pepper, brandy, &c.

But it has been observed, that a repetition of purgative injections, and the patient's refraining for some hours (should his strength admit of it) from swallowing either medicine or food, has had a good effect.

The authorities for bleeding in incipient cases of this fever, with a view to prevent congestion and subsequent topical inflammation, are no doubt very respectable, and in some cases when the patient was vigorous and plethoric, the practice has been successful. But we are now, I presume, possessed of a remedy in the affusion of cold water, which more speedily produces a solution of fever, and checks the inordinate action of the heart and arteries, from the continuance of which arise the congestion and topical inflammation so much to be dreaded. It is a mode too of removing fever, which possesses one great advantage over that by the lancet; for though it should not produce the complete effect intended, it certainly does not diminish the patient's strength, but leaves him in a state that may enable him to bear the operation of any other energetic remedy that may be thought necessary. On the other hand, should the loss of blood fail in its effects, we may easily conceive how ill the subject of it would be prepared to

struggle against a disease so frequently rapid and fatal in its termination.

I cannot say, however, that I saw many cases here in which I would have recommended the cold affusion. Neither the state of the pulse, nor the heat of the body, were such as, in my opinion, to warrant the application of it. I preferred, therefore, repeated *tepid* spungings with vinegar and water. Children, indeed, were much benefited by the cold affusions.

That the disease in question is contagious, (or more properly speaking, perhaps, *infectious*, as actual contact does not appear to be necessary to its transmission) I entertain not the least doubt, though an opposite opinion has been held by some highly respectable medical characters. I have witnessed both abroad and in this garrison too many melancholy instances of the disease being communicable from one person to another. At Martinique, in the year 1793, we suffered dreadfully from the ravages of a fever, in every respect similar to that which lately appeared here, and in numberless instances its infectious nature was ascertained by its attacking those who were in attendance on the sick; and it is a melancholy truth, that very few of the medical officers survived the pestilential duty in which we were employed. But as in this statement I am only called upon to give my *own* opinion, I do not think it necessary to combat further the opinions of others. I shall

merely add, that innumerable circumstances have brought a degree of conviction to my mind, that is not to be shaken by any arguments or reasonings on the side of *non* contagion, that I have hitherto read or heard of.

In endeavouring to account for the production of the disease in this garrison, many difficulties no doubt arise, which I do not by any means pretend to solve, but merely to state some of those, which in my opinion militate against the idea of the disease having *originated* in Gibraltar. I find a difficulty, for instance, in viewing it as an endemic proceeding from marsh miasma or other noxious exhalations, as a considerable number of persons entirely escaped the disease, though strictly confined to the only situations where I conceive these *effluvia* may be supposed to exist, the Dock Yard and Navy Garden*. I find a difficulty too, in attributing it to the peculiar state of the atmosphere at the period of its appearance: for during the number of years† that have elapsed, since we have held this rock, surely the state of the atmosphere, and supposed prevalence of marsh miasma, &c. must frequently have been as *they were* in the years

* The following certificate is in proof of this assertion :

“ The undersigned has a daily report from the health guard placed at the point of communication with the Dock Yard; and it does not appear that from the commencement of the existing fever, there has been one case among the workmen there.

Gibraltar, 8 Dec. 1813.

H. SWEETLAND,

DR. GILPIN.

Pratique Master.

† Gibraltar came into possession of the English, in 1704.

1804, 1810, and 1813, and I have not heard that a fever of a similar type to that which prevailed during those years is on record.

Local circumstances, such as a great increase of population, crowded dwellings, &c. may have varied no doubt, and concurred in rendering the type of a reigning fever more malignant; but for some years past, I am informed, there has not been much variation in these respects.

I am inclined therefore to believe that this infectious fever was brought into the garrison by a person who died of it, soon after his arrival, as it was said, from a place known to be infected previous to his leaving it: from affidavits on record, it appears, that it was introduced in a similar way in 1804, and had it not been for the prompt and vigorous measures pursued, the year 1813 would have exhibited as melancholy a list of victims.

JOS. D. A. GILPIN, M. D.

Dep. Inspec. of Hospitals.

Dr. Gilpin, in his letter to the President of the Society, states, "that he had not heard that the members of any family, except his own, had entirely escaped the disease; that he ascribes this to their all taking four doses of bark daily, and that he had practised the same precaution with the like success in the West Indies."

He states in the same letter, that above 8000 people were turned out of the place, and that between the 8th of September and the 3d of December, 2347 persons were attacked, of whom 904 died, and of these 460 were of the military.

Statement made by DR. JOHN COSTES, to DR.
GILPIN.

On the 11th of August 1813, a vessel called the Fortune, whereof was master or patron, Ludovico Bosano, alias Malta, arrived at Gibraltar, from Cadiz. One of the crew thereof being ill, was sent to the Catholic hospital, and died on the 19th of the same month, with every symptom of the yellow fever, now prevalent.

A Frenchman, a native of Paris, died on the 3d of September in Government Street, near City Mill Lane, with the same symptoms as the former man, and who had been a passenger with him in the vessel above named. Between the 3d and 11th of September, died nine persons in the same neighbourhood ; and on this day I saw in the same district two cases of the fever ; which I instantly reported to Dr. Gilpin, and Mr. Fraser.

(Signed) JOHN COSTES.

The Society, having through their President, applied to the Medical Board of the Army for information respecting the Epidemic of 1810, were favoured with the following Answer.

*Army Medical Board Office,
August 17, 1814.*

SIR,

In reply to your letter, dated the 12th instant, we have the honor to say, that very little more than usual disease appeared in the garrison of Gibraltar, in the year 1810; except in the regiments which had been on the * expedition to Walcheren in the preceding year, and sent to Gibraltar in the course of that year. Among them there appears from the returns and reports of Dr. Pym, Deputy-Inspector of Hospitals, to have occurred a good deal of intermittent fever, a disease not common in the place on other occasions; but upon the whole, many of the men recovered with equal if not greater rapidity than the like cases did in England. Some transports arrived in Gibraltar Bay from Carthagená, with deserters from the French army, and in five of those ships a fever existed, which gave alarm to Dr. Pym; and in consequence, all promiscuous intercourse between them and the shore was prevented. It soon spread to the other transports, and several men on board

* This expedition took place in autumn, 1809. See the first article of Vol. III. of these Transactions.

fell victims to it. The fever appeared to that medical officer to be the same disease which prevailed so fatally at Gibraltar in 1804; and as it was considered by him as infectious, all his precautions were directed accordingly; and, as it seems, with the best effect. A ship was provided as an hospital for the men taken ill, and a medical officer, Assistant-Surgeon Arthur, of the 4th Veteran Battalion, volunteered his attendance of them. He went on board on the 17th, and was attacked with the fever on the 21st of October. The garrison and inhabitants at that time appears to have been healthy, with the exception above-mentioned; but about the end of the month it was reported to the Deputy-Inspector, that an inhabitant (named Boschetti) was ill of fever, who, when visited by him, seemed to be labouring under the last stage of the yellow fever; a servant of the family was soon afterwards attacked with the like symptoms, and the fever began to spread in the neighbourhood, where upon decisive measures being recommended by Dr. Pym, and promptly put into execution by the order of the Lieutenant-Governor, viz. removing all the infected persons to a lazaretto hospital, and putting the families they belonged to into tents in the neutral ground, with other means with the same view, the disease made no further progress worth notice. At the same time, a few cases of the like disease appeared among the troops quartered in the same district, all of which, along with the corps the men belonged to, the 7th Royal



Veteran Battalion, were immediately removed out of the town, and the fever soon afterwards disappeared. Six men of the troops died, and seven or eight of the inhabitants ; and it is proper to remark, that all those taken ill were in the neighbourhood of each other. Among the deaths, was the wife of an Assistant-Surgeon of the Royal Veterans, whose servants also were seized with the fever.

In the same season of that year, as it is well known, a fatal epidemic prevailed at Carthagena and Cadiz, which Sir James Fellowes, the principal medical officer at the latter, reported to resemble that of 1804, which he saw at Gibraltar ; and likewise that of the West Indies, and of North America ; but at Cadiz, the fever was chiefly confined to the inhabitants, great part of the British troops quartered at the town of the Isla at some distance from the former, escaping it. The Royal Artillery, however, left in town, was not so fortunate, the epidemic getting among them, and proving fatal to several.

The above-mentioned able and intelligent medical officers may have it in their power to furnish you with further information on the nature and probable cause of that fever. We need only say, that they seemed to have had no doubt of its being of the same nature with the one which has occasionally appeared in the South of Spain, re-

sembling in its most striking features the yellow fever (*typhus icterodes*) of the West Indies, and North America; and both of these gentlemen report the remarkable fact, that persons who had been previously affected with the fever were not attacked by it a second time, as Sir James Fallowes observed was the belief, and actually the case at Cadiz; and Dr. Pym was so impressed with it, as to have left men who had been in the West Indies in the infected barracks of the Royal Veteran Battalion, while all the others were removed to camp.

We have the honor to be,

Sir,

Your most obedient humble servants,

JOHN WEIR,

CHARLES KER,

W. FRANKLIN.

To Sir GILBERT BLANE, Bart.

Remarks.

The most obvious and important remarks, arising out of the preceding documents; are—

I. The belief of the principal medical officers in the infectious nature of this epidemic.

II. That the prevalence of it, like that of the

plague, is limited to a particular season of the year. The season at Gibraltar, is the months of September, October, and November. The number of deaths in December is considerably above the average of the rest of the year, but they are chiefly cases in which the seizures must have been in the preceding months; for it appears from Mr. Fraser's table, that the number of new cases diminished rapidly even in November.

III. The various degrees of mortality in the sickly years, as compared to each other, and as compared to the years of ordinary health, are exhibited in the tables. In the year 1804, the proportion of annual mortality taken on the average strength of the garrison, was 1 in 5.4. The whole number of deaths in this year was 548, of which only 44 occurred in the nine months exempt from the epidemic. In the year 1810, the proportional annual mortality on the average strength of the garrison was 1 in 16.1. This was more equally diffused through the year, imputable no doubt to the presence of those regiments which had served in Walcheren. The whole number of deaths was 307, of which 187 occurred in the nine months which are not liable to the epidemic. In 1813, the proportional annual mortality on the average strength of the garrison was 1 in 10.6. The whole number of deaths was 326, of which 260 occurred in the three epidemic months.

IV. It appears from the reports of mortality in the three years of ordinary health, that in the three months to which the epidemic is incident, the mortality is not greater than in the other months of the year.

V. That the average mortality of the years of ordinary health is 1 in 48.4. This is a rate of mortality considerably greater than what takes place in the same class of subjects in England; for by the returns of population in 1811, the rate of mortality there in all ages was 1 in 49. And it appears by calculations, instituted with a view to ascertain the value of lives in granting annuities, that the mortality of persons in the prime of life is about one half of what it is on the whole population of all ages. Is this difference owing merely to climate, or in part also to some peculiar circumstances in the situation of this garrison?

Return of the Effective Strength of the Garrison of Gibraltar, and the Number of Deaths which occurred in each Month, of the Years 1804, 1810, and 1813, exclusive of Artillery* and Engineers.

Adjutant-General's Office, June 29, 1814.

| | In 1804. | | In 1810. | | In 1813. | |
|------------|-------------|---------|-------------|---------|-------------|---------|
| | Effectives. | Deaths. | Effectives. | Deaths. | Effectives. | Deaths. |
| In January | 3084 | 0 | 5032 | 14 | 3783 | 13 |
| February | 3036 | 1 | 4286 | 13 | 3787 | 10 |
| March | 3032 | 4 | 5497 | 17 | 3766 | 8 |
| April | 3050 | 1 | 6896 | 16 | 3898 | 4 |
| May | 3084 | 2 | 6707 | 26 | 3396 | 3 |
| June | 3096 | 1 | 6392 | 20 | 3514 | 7 |
| July | 3099 | 4 | 5842 | 21 | 3461 | 7 |
| August | 3086 | 3 | 5982 | 37 | 3456 | 3 |
| September | 3133 | 31 | 7252 | 38 | 3423 | 30 |
| October | 2774 | 359 | 6351 | 43 | 3263 | 160 |
| November | 2569 | 114 | 5761 | 39 | 3234 | 70 |
| December | 525 | 28 | 5623 | 23 | 3226 | 11 |
| | | 548 | | 307 | | 326 |

* These Corps do not report to the Adjutant-General's Office,

Return of the Effective Strength of the Troops, and the Number of Deaths which occurred in the Garrison of Gibraltar, in each Month of the Years 1803, 1807, and 1812.

Adjutant-General's Office, July 13, 1814.

| | In 1803. | | In 1807. | | In 1812. | |
|------------|-------------|---------|-------------|---------|-------------|---------|
| | Effectives. | Deaths. | Effectives. | Deaths. | Effectives. | Deaths. |
| In January | 3193 | 7 | 5110 | 10 | 4962 | 18 |
| February | 3188 | 1 | 5049 | 11 | 4880 | 15 |
| March | 3130 | 3 | 5141 | 5 | 4875 | 6 |
| April | 3136 | 4 | 5281 | 6 | 4232 | 7 |
| May | 3130 | 6 | 5268 | 8 | 4233 | 4 |
| June | 3563 | 4 | 4726 | 7 | 3851 | 11 |
| July | 3264 | 9 | 4910 | 7 | 3865 | 4 |
| August | 3204 | 6 | 4875 | 7 | 3858 | 8 |
| September | 3189 | 3 | 4180 | 9 | 3847 | 4 |
| October | 3105 | 3 | 4166 | 11 | 3840 | 5 |
| November | 3136 | 6 | 4183 | 9 | 3831 | 9 |
| December | 3155 | 4 | 5882 | 15 | 3847 | 9 |
| | | 56 | | 105 | | 100 |

Return of Inhabitants and Soldiers, who died in
the Garrison of Gibraltar, from the 30th of
September, to 1st of December, 1804.

| | |
|--------------------------------|-------|
| Inhabitants | 4864 |
| Royal Artillery..... | 200 |
| Royal Military Artificers..... | 123 |
| Barrack Artificers..... | 15 |
| 2nd or Queen's regiment..... | 91 |
| 10th ditto | 28 |
| 13th ditto | 128 |
| 54th ditto | 100 |
| De Roll's | 188 |
| Officers | 57 |
| Jews | 730 |
| | <hr/> |
| Total | 6524 |
| | <hr/> |

This return was given to me by a very respectable inhabitant of Gibraltar. As I was not in the garrison at that period, I cannot vouch for its accuracy; but from what I have heard from those who were there, I believe it to be near the truth.

JOS. D. GILPIN.

GENERAL STATEMENT of Sick and Deaths, from the Epidemic Disease in Gibraltar, from 8th September to 13th November, 1813.

| Dates. | New Cases in | | | | Deaths in | | | | Detail of Military Deaths. | |
|--|---|-------|--------|------------------------|---|-------|--------|------------------------|--|------------------|
| | Inhab ^{ts} . Laz ^t . | Town. | South. | Military Hospitals. | Inhab ^{ts} . Laz ^t . | Town. | South. | Military Hospitals. | Regiments. | N ^o . |
| To 17th September, 1813.. | 54 | 17 | — | — | 16 | 17 | — | — | Officers | 24 |
| 24th | 110 | — | — | 211 | 26 | 20 | 5 | 28 | Royal Artillery | 66 |
| 1st October | 134 | 45 | 8 | 165 | 60 | 34 | — | 61 | Royal Sappers and Miners | 18 |
| 8th | 107 | 94 | 11 | 232 | 50 | 21 | 3 | 49 | 4th R. V. B. | 57 |
| 15th | 104 | 198 | 27 | 261 | 48 | 20 | 2 | 69 | 11th Foot (Detach ^t) | 69 |
| 22d | 81 | 181 | 15 | 289 | 46 | 48 | 5 | 79 | 26th | 15 |
| 29th | 34 | 63 | 3 | 158 | 26 | 34 | — | 57 | 37th | 49 |
| 5th November | 9 | 14 | — | 95 | 3 | 3 | — | 25 | Foreign Recruits | 50 |
| 13th | 8 | 6 | 2 | 59 | 6 | 4 | 2 | 16 | Barrack Department | 18 |
| | | | | | | | | | Soldiers' Wives | 3 |
| | | | | | | | | | Children | 58 |
| Total..... | 635 | 618 | 66 | 1470 | 281 | 201 | 17 | 384 | Total | 441 |
| <p>To</p> <p>Dr. GILPIN.</p> <p>W. W. FRASER,</p> <p><i>Surgeon-Major.</i></p> | | | | | | | | | | |

STATE OF THE WEATHER IN THE AUTUMNS OF
1811, 1812, 1813, unto 13th November.

| Population before 8th Sept. 1813. | | Months. | | September | | October | | November | |
|--|--------|---------|--|------------------|--|---------------|--|----------------|--|
| Civilians estimated at..... | 15,000 | | | 78 $\frac{1}{4}$ | | 75 | | 68 | |
| Garrison Soldiers, Wives and Children | 5,501 | | | 71 | | 64 | | 61 | |
| Total..... | 20,501 | | | | | | | | |

| Present Civil Population. | | Thermometer. | | Wind. | | Days Rain. | | Thermometer. | | Wind. | | Days Rain. | | Thermometer. | | Wind. | | Days Rain. | |
|---------------------------|------|--------------|--|-------|--|------------|----|--------------|--|-------|--|------------------|----|--------------|--|-------|--|------------------|----|
| British Settlers | 882 | Highest. | | East. | | 1 | 5 | Highest. | | East. | | 3 | 8 | Highest. | | East. | | 4 | 10 |
| | | Lowest. | | West. | | | | Lowest. | | West. | | | | Lowest. | | West. | | | |
| | | Medium. | | | | | | Medium. | | | | | | Medium. | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Natives of Gibraltar | 1699 | | | | | 14 | 20 | | | | | 80 | 67 | | | | | 74 | 17 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| British & native Jews | 555 | | | | | 16 | 11 | | | | | 75 | 66 | | | | | 74 | 14 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Foreign | 325 | | | | | 9 | 4 | | | | | 72 | 60 | | | | | 69 $\frac{1}{2}$ | 9 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Spaniards | 1378 | | | | | | | | | | | 79 $\frac{1}{2}$ | 66 | | | | | 61 $\frac{1}{2}$ | 9 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Portuguese | 747 | | | | | 1 | 5 | | | | | 14 | 6 | | | | | 69 | 14 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Genoese | 1398 | | | | | 1 | 5 | | | | | 82 | 78 | | | | | 76 | 10 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Sardinians | 182 | | | | | 4 | | | | | | 75 | 66 | | | | | 62 | 10 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| French | 61 | | | | | 1 | | | | | | 72 | 60 | | | | | 61 $\frac{1}{2}$ | 1 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Germans | 116 | | | | | 1 | | | | | | 79 $\frac{1}{2}$ | 66 | | | | | 69 | 10 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Moors..... | 27 | | | | | 1 | | | | | | 72 | 60 | | | | | 61 $\frac{1}{2}$ | 1 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Total..... | | 7370 | | | | | | | | | | | | | | | | | |

This unusual quantity of rain began to fall whilst the epidemic was at its acme, and produced no alteration. The state of the thermometer, &c. &c. was taken at 10 A.M. and 3 P.M.

* Seven days N.E. wind in October, 1813.

This unusual quantity of rain began to fall whilst the epidemic was at its acme, and produced no alteration. The state of the thermometer, &c. &c. was taken at 10 A.M. and 3 P.M.

* Seven days N.E. wind in October, 1813.



G. WOODFALL, Printer, Angel Court, Skinner Street, London.







